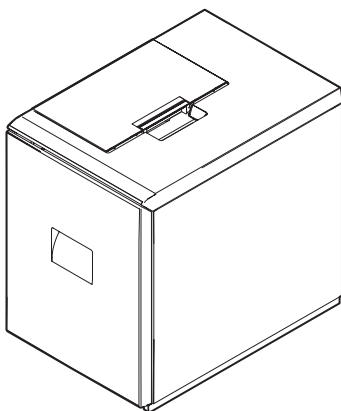


SHARP SERVICE MANUAL

CODE: 00ZMXLCX2/S1E



DIGITAL FULL COLOR MULTIFUNCTIONAL SYSTEM OPTION LARGE CAPACITY TRAY

MODEL MX-LCX2

CONTENTS

[1] PRODUCT OUTLINE.....	1-1
[2] SPECIFICATIONS	2-1
[3] UNPACKING AND INSTALLATION	
* For unpacking and installation, refer to the installation manual([2]).	
[4] EXTERNAL VIEWS AND INTERNAL STRUCTURES	4-1
[5] OPERATIONAL DESCRIPTION	5-1
[6] DISASSEMBLY AND ASSEMBLY	6-1
[7] MAINTENANCE.....	7-1
[8] ADJUSTMENTS	8-1
[9] SIMULATION	9-1
[10] SELF DIAG MESSAGE AND TROUBLE CODE	10-1
[11] ELECTRICAL SECTION	11-1

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

This document has been published to be used
for after sales service only.
The contents are subject to change without notice.

CONTENTS

[1] PRODUCT OUTLINE 1-1

[2] SPECIFICATIONS 2-1

[3] UNPACKING AND INSTALLATION

* For unpacking and installation, refer to the installation manual([2]).

[4] EXTERNAL VIEWS AND INTERNAL STRUCTURES

1. Motor, clutch, solenoid 4-1
2. PWB, sensor, switch, heater 4-2

[5] OPERATIONAL DESCRIPTION

1. Lift operation 5-1
2. Paper feed operation. 5-1
3. Paper empty detection 5-2

[6] DISASSEMBLY AND ASSEMBLY

1. Maintenance parts replacement procedures 6-1
2. Each unit removal 6-1
3. Major parts removal 6-2

[7] MAINTENANCE

1. Maintenance system table 7-1

[8] ADJUSTMENTS

1. List 8-1
2. Details 8-1

[9] SIMULATION

1. List 9-1
2. Details of trouble code 9-1

[10] SELF DIAG MESSAGE AND TROUBLE CODE

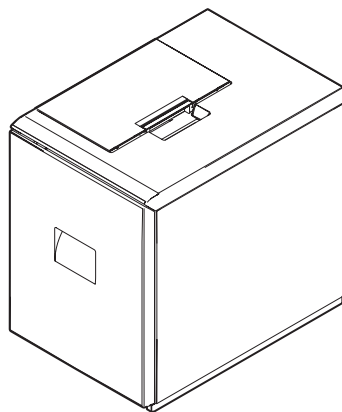
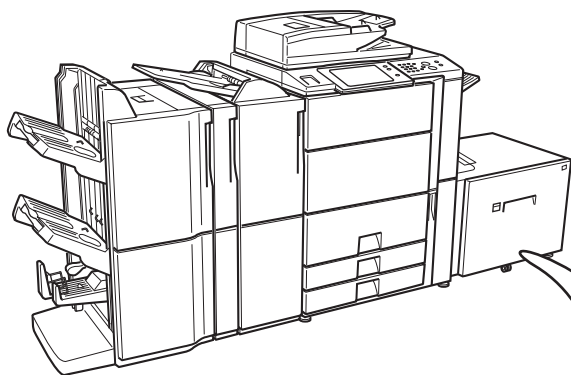
1. Self diag 10-1
2. Trouble code list 10-2
3. Trouble code details 10-2

[11] ELECTRICAL SECTION

1. Electronic/mechanical parts relationship diagram 11-1
2. Block diagram 11-2
3. Wiring diagram 11-3

[1] PRODUCT OUTLINE

This model is a large capacity paper feed tray installed to the main unit.
It stores 3,500 sheets, eliminating troublesome paper supply.



MX-LCX2

[2] SPECIFICATIONS

Model			Large capacity tray
Transport reference			Center reference
Heat reserving heater			Domestic: Heater kit support Overseas: Service parts support
Paper capacity	Domestic	Normal paper (64g/m ² ,17 lbs bond)	4000 sheets
	Overseas	Normal paper (80g/m ² ,21 lbs bond)	3500 sheets
Paper size/type/weight			Refer to Table 1
Paper size detection			Not provided (Manually setting from the control panel of the main unit)
Paper type setting			Refer to Table 2
Paper size change system		Changeover by user	No
		Changeover by service man (Adjustment of guide and entry of size)	Yes
Factory setting of paper size		Domestic	A4
		Overseas, Inch series	8.5x11
		Overseas, AB series	A4
Remaining paper detection			Paper empty and 6 steps (100% ,83.3% ,66.7% ,50% ,33.3% ,16.7% ,Paper empty)
Tray lift time		Up	max. 15 sec.
		Down	max. 5sec.
Troubleshooting of paper jam			Can be corrected without separating the unit.
Reliability			MCBJ:Conforms to the main unit MCBF:Conforms to the main unit
Life			Conforms to the main unit
Power source			Supplied from the main unit
Power consumption			Normal operation: 26.4W Lift up:40.8W
Dimensions(WxDxH)			370 x 550 x 525mm 14 9/16x21 41/64x20 21/32 inch
Occupying area(WxD)			370x550mm 14 9/16x21 21/32 inch
Weight			Approx. 28kg, 61.7lbs
Installation/Maintenance			Implemented by service man
Maintenance parts			Paper feed roller
Optional detection			Automatic detection
Bundled item			Parts for installation

Table 1 : Paper size, type, weight

Table 1. Paper size, type, weight			
Paper size		A3W	No
		A3	No
		B4	No
		A4	Yes
		A4R	No
		B5	Yes*1
		B5R	No
		A5R	No
		12	No
		11×17	No
		8.5×14	No
		8.5×13	No
		8.5×11	Yes
		8.5×11R	No
		7.25×10.5R	No
		5.5×8.5R	No
		8K	No
		16K	No
		16KR	No
		Postcard	No
	Envelope	No	
	Special	No	
Kind/weight of applicable paper	Thin paper	55-59g/m ² 15-16- lbs bond	No
	Normal paper	60-105g/m ² 16-28 lbs bond	Yes
	Cardboard 1 (including gloss paper)	106-209g/m ² 28+-56- lbs bond	Yes
	Cardboard 2	210-256g/m ² 56-68 lbs bond	No
	Envelope	75-90g/m ² 20-24 lbs bond	No
	OHP paper		No
	Label paper		No
	Tab paper		No

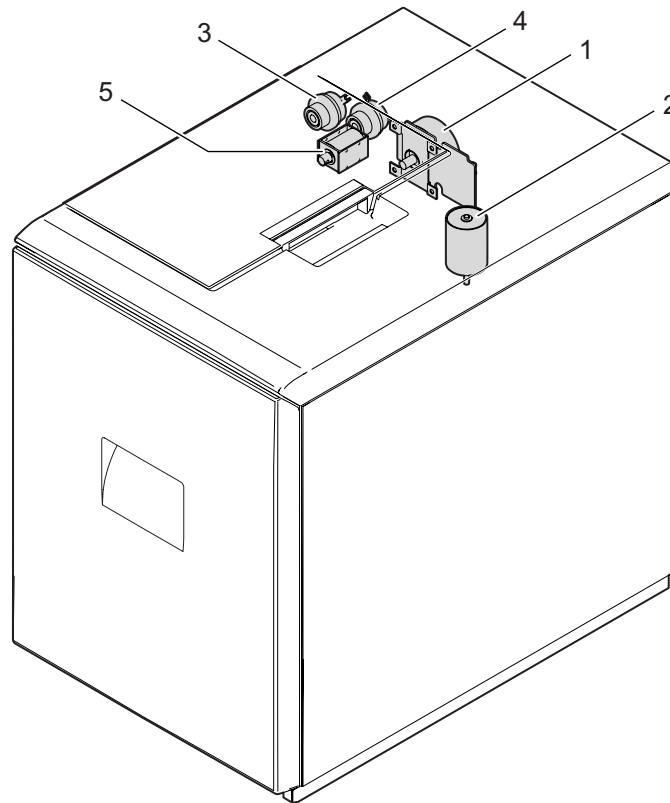
Table2 : Paper type setting

Paper type	Normal paper	Yes
	Printed paper	Yes
	Recycled paper	Yes
	Letter head	Yes
	Perforated paper	Yes
	Color paper	Yes
	Cardboard 1	Yes
	Cardboard 2	No
	Thin paper	No
	Label paper	No
	OHP	No
	Tab paper	No
	Envelope	No
	Use type 1 to 7	Yes

*1)Setting of paper in B5 size is enabled in only Japan and overseas AB series size paper is available.

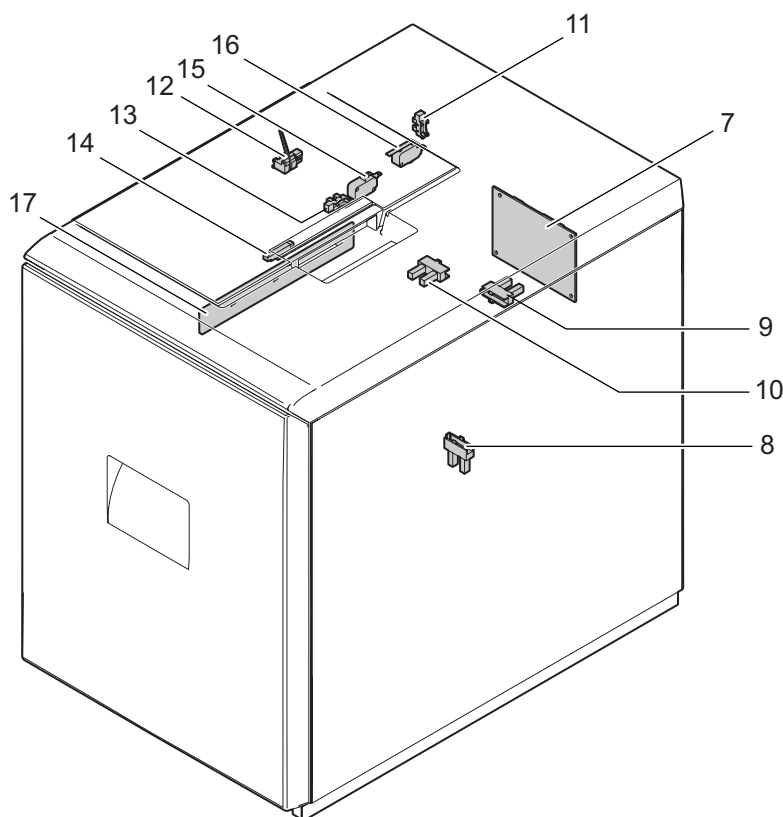
[4] EXTERNAL VIEWS AND INTERNAL STRUCTURES

1. Motor, clutch, solenoid



No.	Parts						MODEL	NOTE
	Code	Signal name	Name	Type	Function/Operation	Active condition		
1	LPFM	LPFM	Transport motor	Brushless motor	Drives the paper feed, and the paper transport section.	When paper feed is started, "H" level.		
2	LLM	LLM	Lift motor	Brush motor	Lifts the paper feed table.	When the lower limit sensor is ON, "H" level. When the upper limit sensor is ON, "L" level.		
3	LTRC	LTRC	Transport clutch		Controls ON/OFF of the transport roller.			
4	LPFC	LPFC	Paper feed clutch		Controls ON/OFF of the paper feed roller.	When paper feed is started, "H" level. After starting transport (pickup OFF), it is turned OFF by the timer.		
5	LPFS	LPFS	Paper feed solenoid		Presses the paper pickup roller onto paper.	Turned OFF after starting transport. Turned ON by the timer. * Lift-up - When paper empty detection is made: ON		

2. PWB, sensor, switch, heater



No.	Parts						MODEL	NOTE
	Code	Signal name	Name	Type	Function/Operation	Active condition		
7	MAIN PWB	-	LCC main PWB		Controls and drives the LCC.			
8	LDD	LDD	Lower limit sensor		The lower limit of the tray is detected.	When the tray is at the lower limit, "H" level.		
9	LRE	LRE	Lift motor encoder		The lift motor rotation is detected.	Pulse signal		
10	LCSW	LCSW	Cassette detection		The tray insertion is detected.	When inserted, "H" level.		
11	LTOD	LTOD	The main unit connection sensor		Detects connection to the main unit.	When connected, "L" level.		
12	LPFD	LPFD	Transport sensor		Detects paper transport.	L level at paper remaining detection.		
13	LUD	LUD	Upper limit sensor		Detects the paper upper limit position.	When "H" level (ON), the lift-up motor stops.		
14	LPED	LPED	Paper presence/empty sensor		Detects paper presence/empty on the paper tray.	When paper is detected, "L". * When lifting up, if "L" with LRE 800 pulse, the paper feed solenoid is ON.		
15	LLSW	LLSW	Upper limit switch		Protects the paper feed unit from breakage due to lifting the tray too much.			
16	LDSW	LDSW	Upper open/close switch		Detects open/close of the upper door.			
17	DH	DH	Thermal heater		Keeps temperature in the LCC tray.		Japan only	

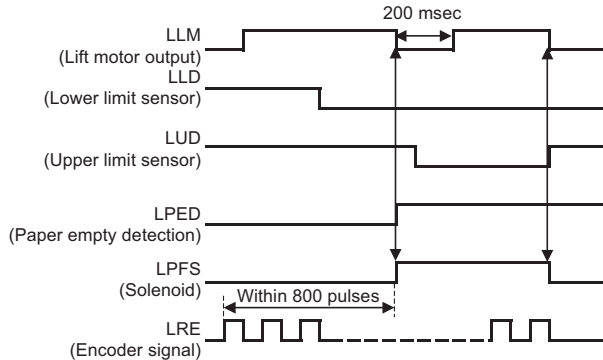
[5] OPERATIONAL DESCRIPTION

1. Lift operation

When the main unit is turned ON, if the tray is at the lower limit position (lower limit sensor: LDD ON position), the lift motor is turned ON to lift the tray.

When the paper presence/empty sensor (LPED) is turned ON within 800 pulses of the encoder signal from start of lifting up the tray, the lift motor is turned OFF to stop the tray, and the paper feed solenoid is turned ON to move down the pickup roller. After that, the lift motor is turned ON to lift the tray. The tray is stopped when the upper limit sensor (LUD) is turned ON.

Lifting up operation (When LPED is turned ON within 800 pulses of encoder.)

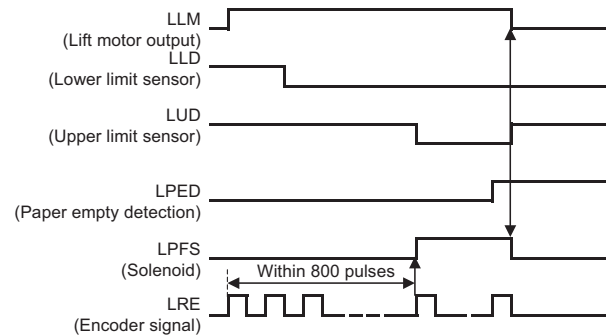


If the paper presence/empty sensor (LPED) is not turned on within 800 pulses, the paper feed solenoid is turned ON with the lift motor ON to move down the pickup roller. The lift motor is stopped at the upper limit sensor (LUD) ON position, and the paper feed solenoid is turned OFF.

When the machine power is turned on, if the tray is on the paper feed position, lifting is not performed.

When the tray is pulled out, it moves down by its own weight.

Lifting up operation (When LPED is not turned ON within 800 pulses of encoder.)

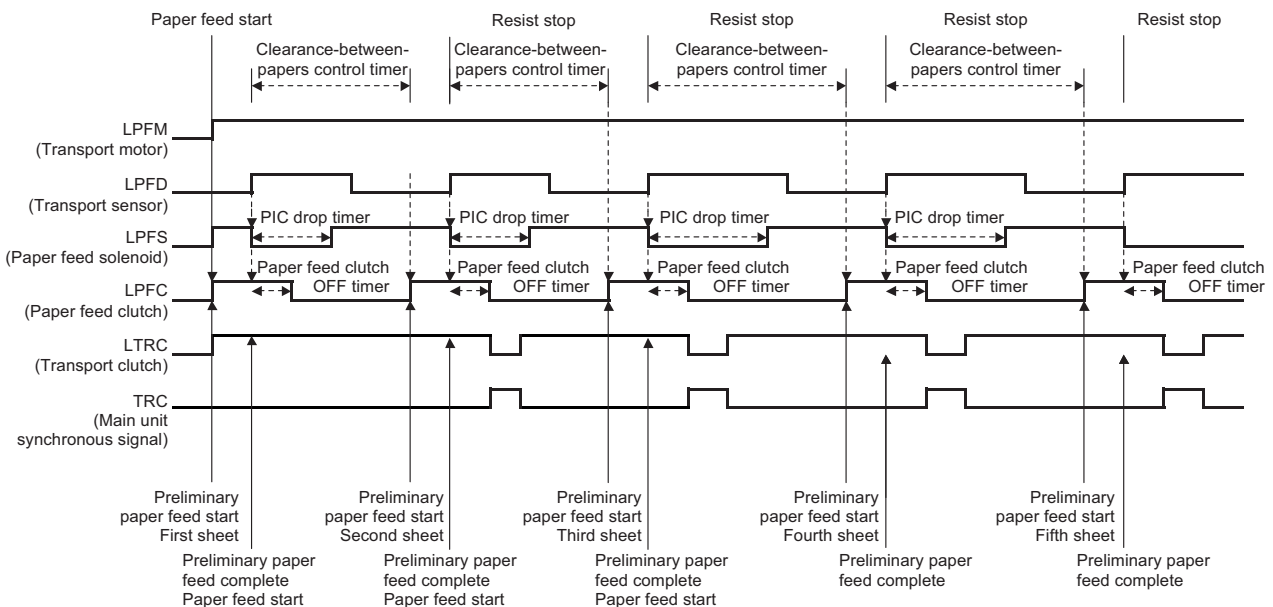


2. Paper feed operation

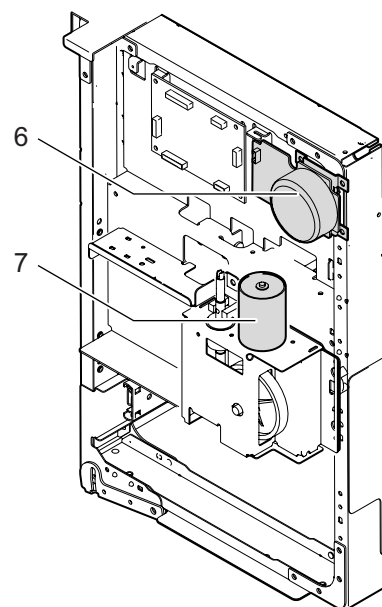
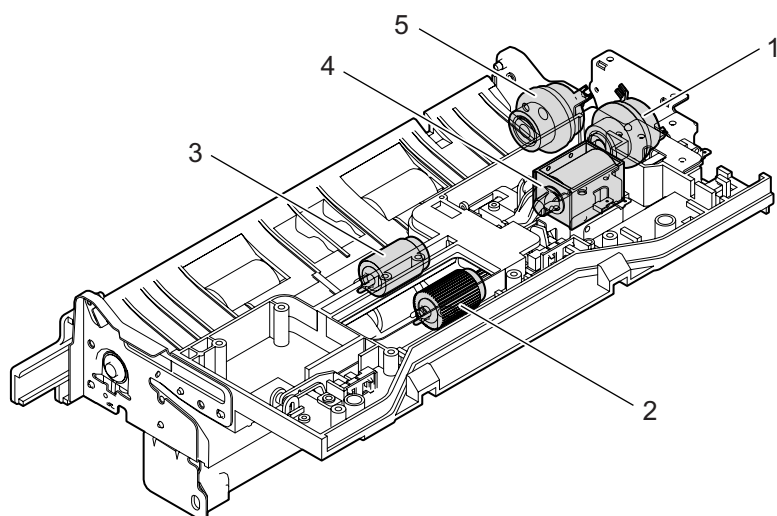
When the tray is stationary at the paper feed position (upper limit sensor: LUD ON position) and there is paper on the tray, paper feed operation can be performed.

Paper feed operation is performed by the transport motor (LPM), the transport clutch (LTRC), the paper feed clutch (LPFC), and the paper feed solenoid (LPFS) at the following timing.

LCC paper feed time chart



When the transport clutch (LTRC) is turned ON with the transport motor (LRFM) ON (rotating), the transport roller rotates. When the paper feed clutch (LPFC) is turned on under this state, the paper feed roller and the take-up roller rotate. When the paper feed solenoid (LPFS) is turned ON, the take-up roller is pushed down to press paper.



1	Paper feed roller clutch
2	Take-up roller
3	Paper feed roller
4	Paper feed solenoid
5	Transport clutch
6	Transport motor
7	Lift-up motor

3. Paper empty detection

When the tray lifts and stops at the paper feed position and during paper feed operation, paper presence/empty is detected by the paper presence/empty sensor (LPED).

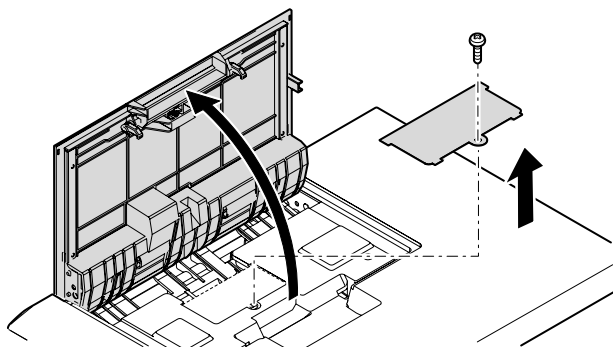
When paper empty is detected in the tray during paper feeding, paper feeding is stopped.

[6] DISASSEMBLY AND ASSEMBLY

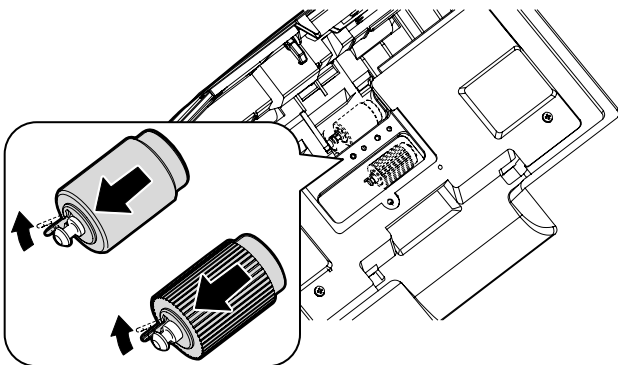
1. Maintenance parts replacement procedures

A. Paper feed roller

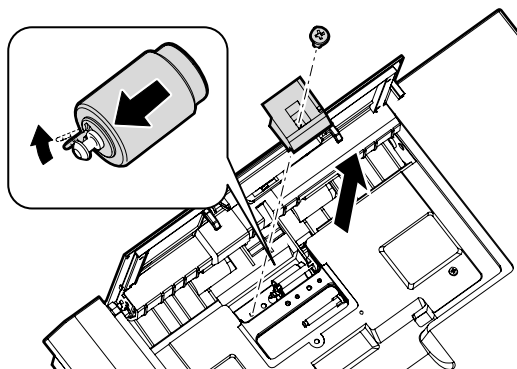
- 1) Pull the lever, and open the upper cover.
- 2) Remove the screw, and remove the sheet.



- 3) Remove the pawl, and remove the take-up roller and the paper feed roller.



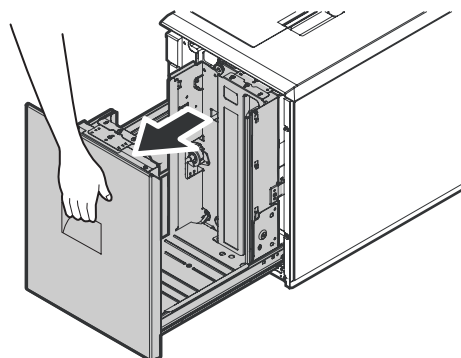
- 4) Remove the screw, and remove the paper guide block.
- 5) Remove the pawl, and remove the reverse roller.



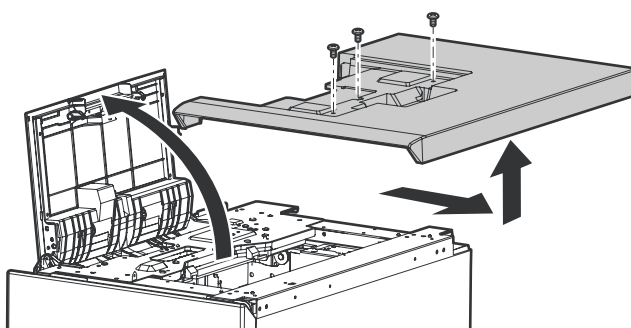
2. Each unit removal

A. Paper feed unit

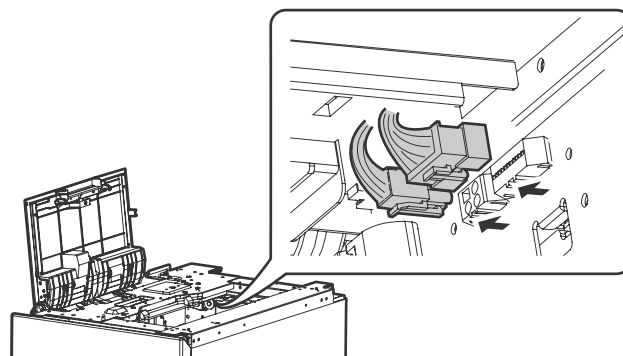
- 1) Pull out the tray.



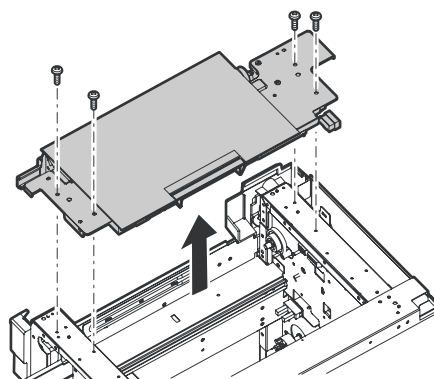
- 2) Open the upper cover, and remove three screws.
- 3) Remove the upper cabinet.



- 4) Disconnect the connectors (2 positions).

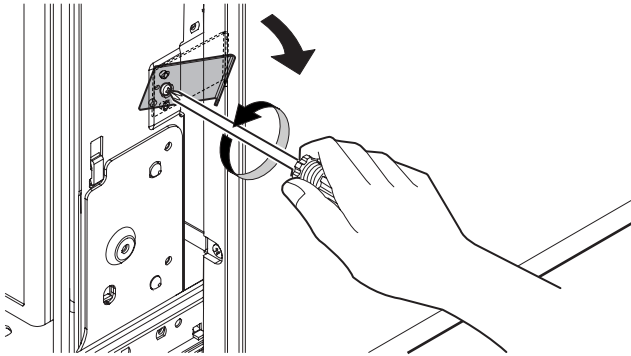


- 5) Remove the screw, and remove the paper feed unit.

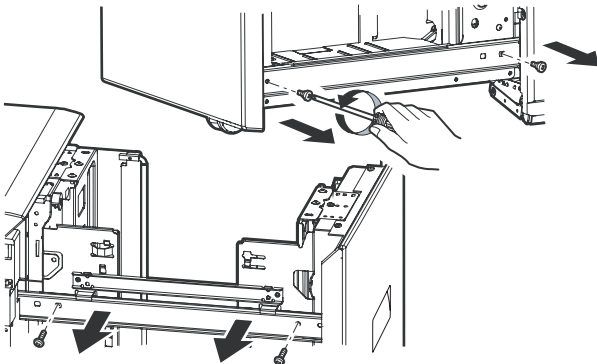


B. Paper feed tray

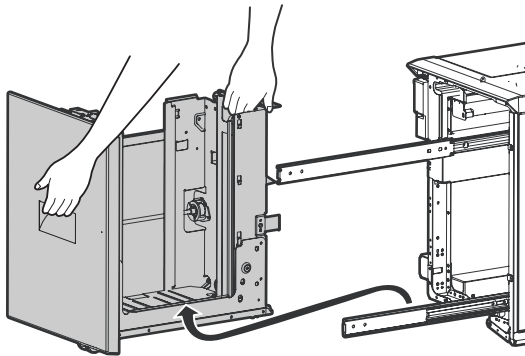
- 1) Pull out the tray.
- 2) Loosen the stopper fixing screw (1) on the lower right side of the paper tray, evacuate the stopper not to function.



- 3) Remove the screws from the left and right rail sections.

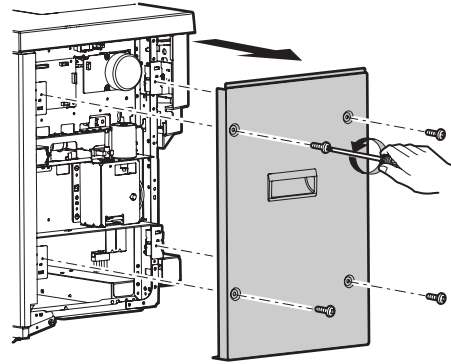


- 4) Remove the tray unit from the rail.

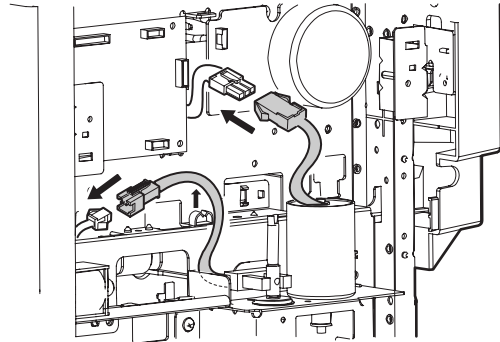


C. Drive unit

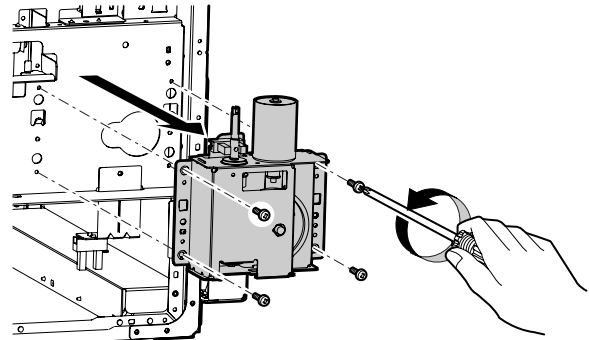
- 1) Remove the screw, and remove the rear cover.



- 2) Remove the connectors (2 positions).



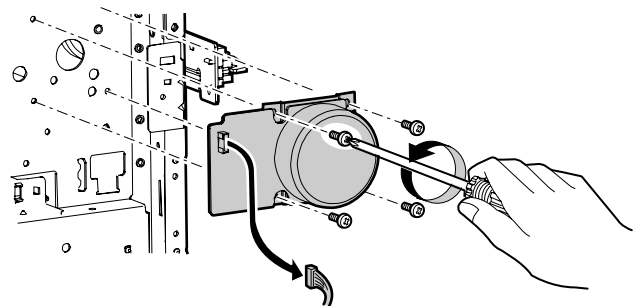
- 3) Remove the screw, and remove the drive unit.



3. Major parts removal

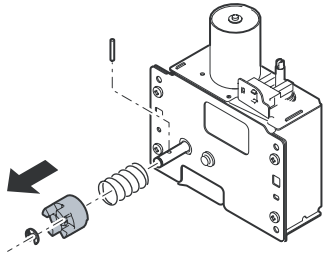
A. Motor (Main)

- 1) Remove the screw, and remove the rear cover.
- 2) Disconnect the connector.
- 3) Remove the screw, and remove the motor.

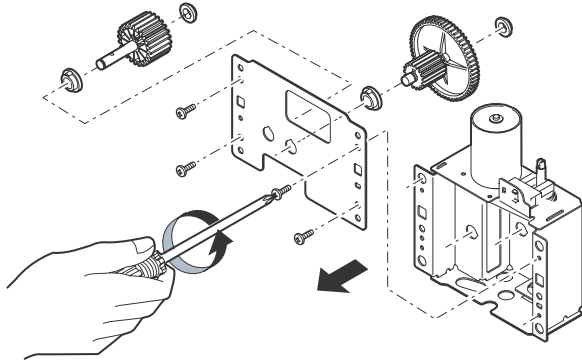


B. Lift motor

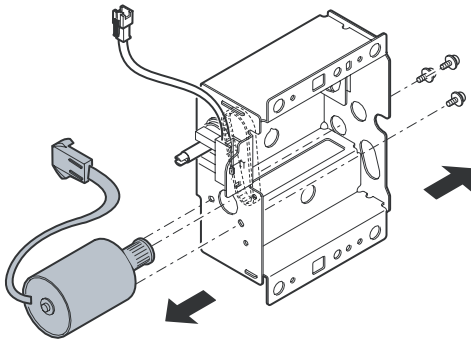
- 1) Remove the drive unit.
- 2) Remove the E-ring, and remove the parts.



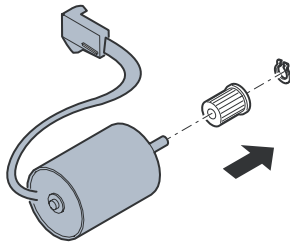
- 3) Remove the screw, and remove the cover.



- 4) Remove the screw, and remove the lift motor.

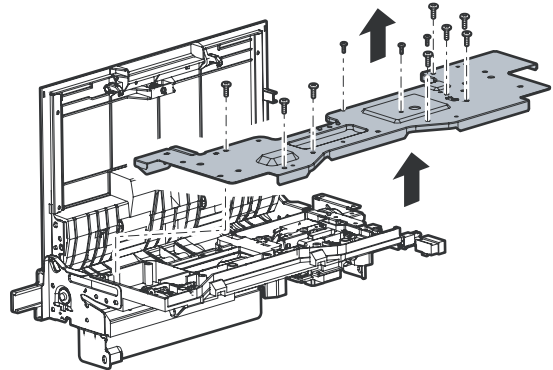


- 5) Remove the ring, and remove the pulley.

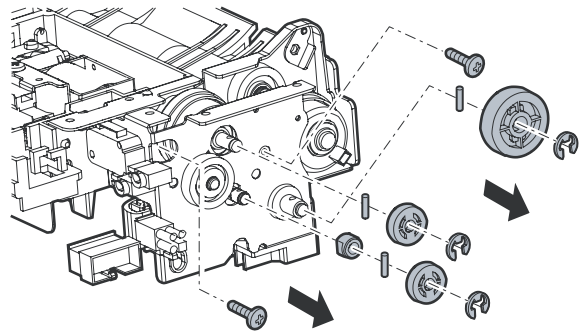


C. Clutch

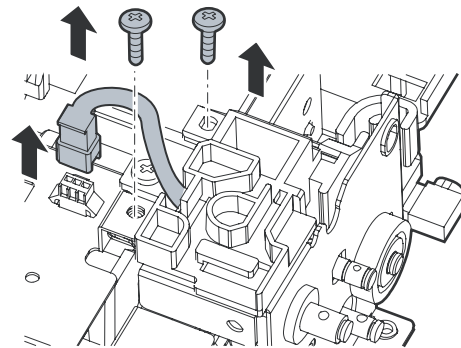
- 1) Remove the paper feed unit. (Refer to "3. Each unit removal.")
- 2) Remove the screw, and remove the cover.



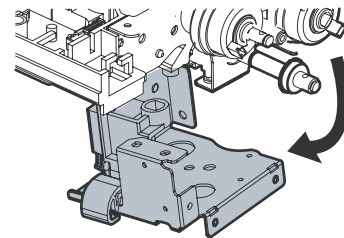
- 3) Remove the E-ring, and remove the parts.



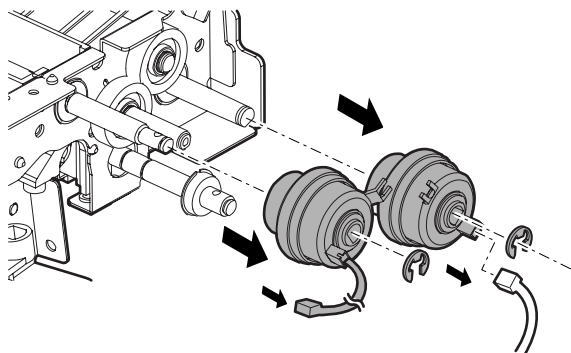
- 4) Disconnect the connector, and remove the screw.



- 5) Remove the frame.

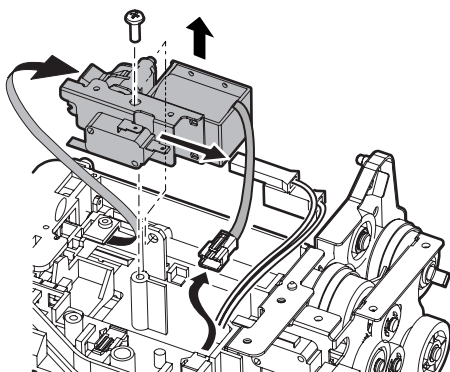


- 6) Remove the connector, and the E-ring, and remove the paper feed, transport clutch, respectively.

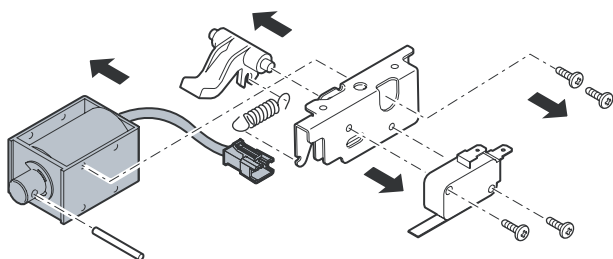


D. Paper feed solenoid

- 1) Remove the paper feed unit.
- 2) Remove the cover.
- 3) Remove the screw, and remove the unit.

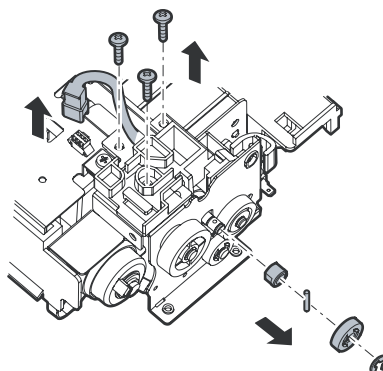


- 4) Disconnect the connector.
- 5) Remove the screw, and remove the solenoid.

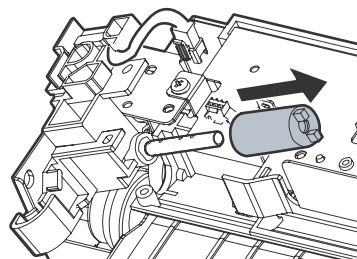


E. Torque limiter

- 1) Remove the paper feed unit.
- 2) Remove the cover.
- 3) Remove the E-ring and the screw, and remove the parts.

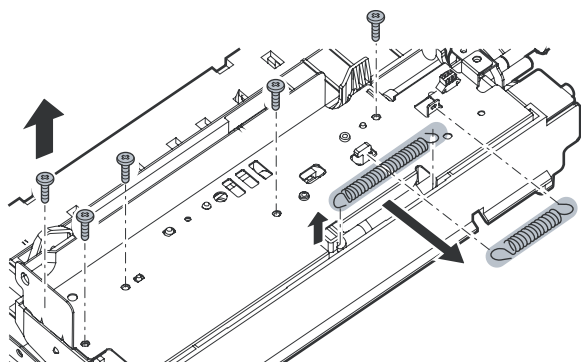


- 4) Lift the shaft, and remove the torque limiter.

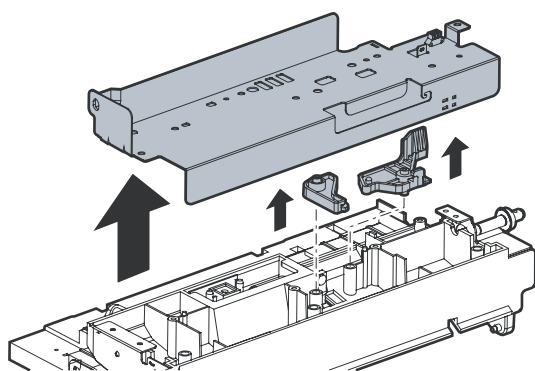


F. Transport roller

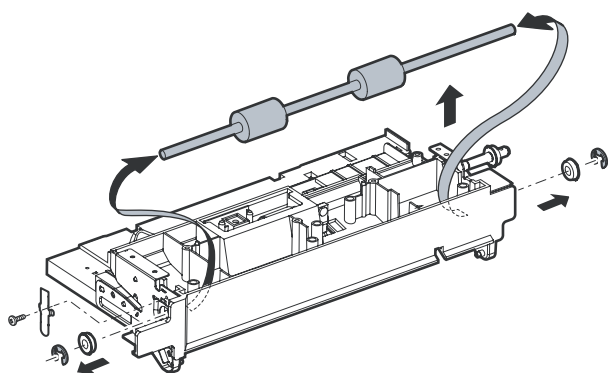
- 1) Remove the paper feed unit.
- 2) Remove the cover.
- 3) Remove the spring, and remove the screw.



- 4) Remove the plate cover, and remove the lever.



- 5) Remove the clutch.
- 6) Remove the screw and the E-ring, and remove the parts.
- 7) Remove the transport roller.



[7] MAINTENANCE

1. Maintenance system table

× : Checking (clean, replace or adjust as required) ○ : Cleaning ▲ : Replace △ : Adjust ☆ : Lubricate □ : Position shift

No.	Part name	When calling	Main unit maintenance cycle	Remarks
1	Pick-up roller/each paper feed roller	×	○	As a rough guide, these rollers should be replaced when the LCC paper feed counter reaches a value of 100K (Sim22-9) or when one year has elapsed since the start of use.
2	Torque limiter	×	×	As a rough guide, the torque limiter should be replaced when the LCC paper feed counter reaches a value of 800K (Sim22-9).
3	Each transport rollers	×	○	
4	Each transport paper guides	○	○	
5	Each gears	×	×	
6	Each belts		×	
7	Each sensors	×	×	

[8] ADJUSTMENTS

Each adjustment item in the adjustment item list is indicated with its JOB number. Perform the adjustment procedures in the sequence of Job numbers from the smallest to the greatest.

However, there is no need to perform all the adjustment items. Perform only the necessary adjustments according to the need.

Unnecessary adjustments can be omitted. Even in this case, however, the sequence from the smallest to the greatest JOB number must be observed.

If the above precaution should be neglected, the adjustment would not complete normally or a trouble may occur.

1. List

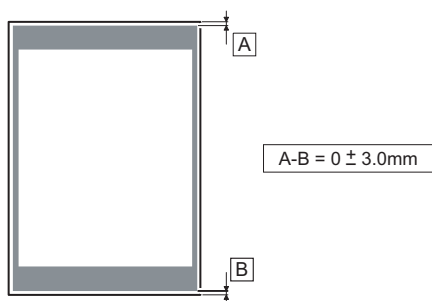
Job No.	Adjustment item list			Simulation to be used
ADJ 1	Print off-center adjustment			50-10
ADJ 2	Resist amount adjustment	ADJ 2A	Change in the resist amount adjustment/deflection amount correction value	51-02
		ADJ 2B	Adjustment of the print lead edge adjustment	50-05

2. Details

ADJ 1 Print off-center adjustment

- 1) Execute SIM-50-10 by the key operation of the machine. Then, the displays shown on the right side appear.
- 2) The print off-center adjustment value can be set for each tray.
- 3) Press the [↓] key on the touch panel to select "G:50:LCC".
- 4) Then, enter your desired adjustment value with the [10] key.
(Default: 50 Adjustment range: from 1 to 99)
 - * If the adjustment value is decreased by 1, the main scanning print position is shifted to the front side by 0.1mm.
 - * If the adjustment value is increased by 1, the main scanning print position is shifted to the rear side by 0.1mm.
- 5) When the [EXECUTE] button is pressed, the [EXECUTE] button is highlighted, currently set value is saved into the EEPROM and the RAM, and printing for adjustment pattern image is started. After printing is finished, the [EXECUTE] button returns to the normal display status.
- 6) Check the adjustment pattern image position.

Measure the dimensions of the void area in the adjustment pattern front and rear frame directions, and ensure that they satisfy the conditions shown below.

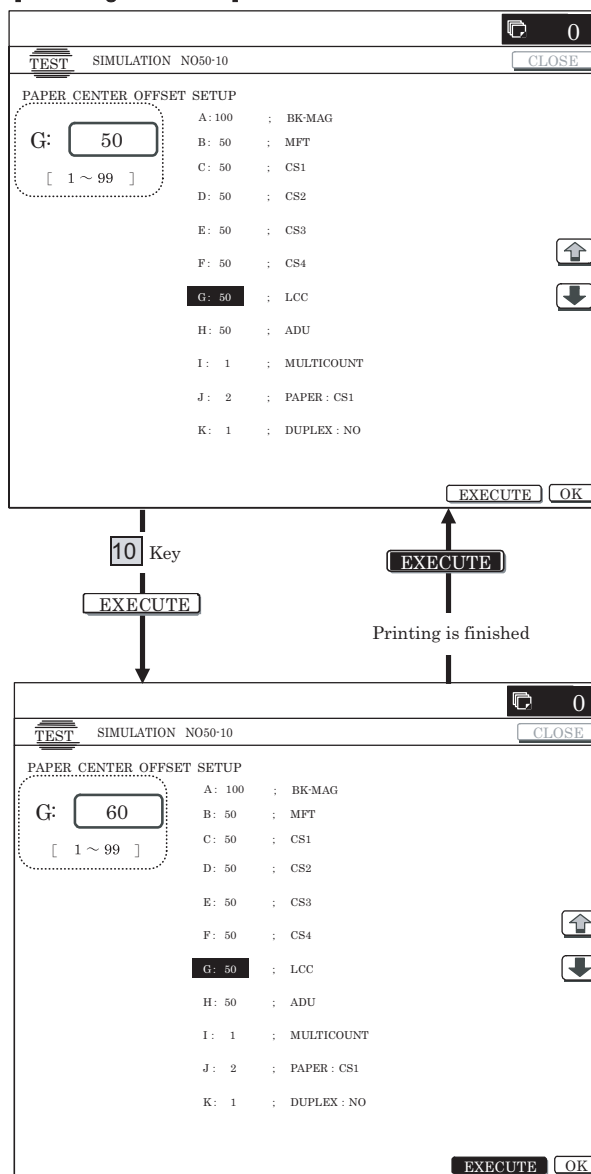


If condition of $A - B = 0 \pm 3.0\text{mm}$ is satisfied, no adjustment is necessary.

If it does not satisfy the condition above, execute the procedures shown below.

- 7) Change the adjustment value. Repeat the steps from 4) to 6) until the condition described in the step 6) is satisfied.
- 8) After the adjustment is finished, escape from the simulation mode with the reset key.

[Switching of screen]



<<Description of items>>

Item	Display item and details		Descriptions		Setting range		Default	Writing
A	BK-MAG		Main scanning print magnification BK		60 to 140		100	Yes
B	MFT		Print off-center adjustment value (manual)		1 to 99		50	Yes
C	CS1		Print off-center adjustment value (cassette 1)		1 to 99		50	Yes
D	CS2		Print off-center adjustment value (cassette 2)		1 to 99		50	Yes
E	CS3		Print off-center adjustment value (cassette 3)		1 to 99		50	Yes
F	CS4		Print off-center adjustment value (cassette 4)		1 to 99		50	Yes
G	LCC		Print off-center adjustment value (LCC)		1 to 99		50	Yes
H	ADU		Print off-center adjustment value (ADU)		1 to 99		50	Yes
I	MULTI COUNT		Number of printed sheets		1 to 999		1	No
J	PAPER	MFT	Cassette selection	Manual	1 to 6	1	2 (CS1)	No
		CS1		Cassette 1		2		
		CS2		Cassette 2		3		
		CS3		Cassette 3		4		
		CS4		Cassette 4		5		
		LCC		LCC		6		
K	DUPLEX	YES	Double sided print selection	Select	0 to 1	0	1(NO)	No
		NO		Not select		1		

ADJ 2 Resist amount adjustment

2-A Changing resist amount adjustment/ deflection amount correction value

- Execute SIM.51-2 by the key operation of the machine. Then, the displays shown on the right side appear.
- Select the [ENGIN] button.
- Press the [↓] key on the touch panel to select "U:50:A4LCC".
- Then, enter your desired adjustment value with the [10] key.
(Default: 50 Adjustment range: from 1 to 99)
* As the adjustment value is increased, the deflection amount is also increased. As the adjustment value is decreased, the deflection amount is also decreased.
(If the adjustment value is changed by "1", the stop timing is changed by 0.1mm (1.0msec).)
- After the adjustment value is entered, press the [OK] key on the touch panel to save the set value.
- After the adjustment is finished, escape from the simulation mode with the reset key.

[Switching of screen]

0

TEST SIMULATION NO51-02 CLOSE

U: 50

[1 ~ 99]

REG1

REG2

ENGIN

OK

N: 50 : MANUAL HEAVY PAPER1(L)

O: 50 : MANUAL OHP1

P: 50 : MANUAL ENV

Q: 50 : ADU PLAIN PAPER(S)

R: 50 : ADU PLAIN PAPER(L)

S: 50 : ADU HEAVY PAPER1(S)

T: 50 : ADU HEAVY PAPER1(L)

U: 50 : A4LCC

V: 50 : A3LCC(S)

W: 50 : A3LCC(L)

X: 50 : A3LCC HEAVY PAPER,P(S)

Y: 50 : A3LCC HEAVY PAPER,P(L)

↑

↓

10 Key

OK

0

TEST SIMULATION NO51-02 CLOSE

U: 60

[1 ~ 99]

REG1

REG2

ENGIN

OK

N: 50 : MANUAL HEAVY PAPER1(L)

O: 50 : MANUAL OHP1

P: 50 : MANUAL ENV

Q: 50 : ADU PLAIN PAPER(S)

R: 50 : ADU PLAIN PAPER(L)

S: 50 : ADU HEAVY PAPER1(S)

T: 50 : ADU HEAVY PAPER1(L)

U: 60 : A4LCC

V: 50 : A3LCC(S)

W: 50 : A3LCC(L)

X: 50 : A3LCC HEAVY PAPER,P(S)

Y: 50 : A3LCC HEAVY PAPER,P(L)

↑

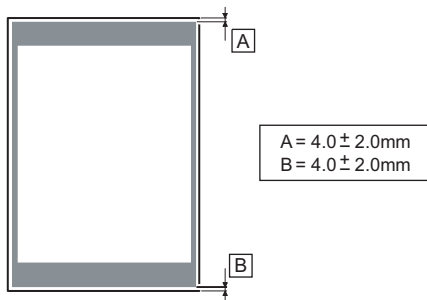
↓

<<Setting range and defaults of set values>>

Item	Button	Item to be displayed	Descriptions (Mode, original, paper feed speed)	Feed direction	Setup range	Default
A		TRAY1(S)	Host machine tray 1, deflection adjustment value (small size)	Not more than LT size	1 to 99	50
B		TRAY2(S)	Host machine tray 2, deflection adjustment value (small size)	Not more than LT size	1 to 99	50
C		TRAY3 PLAIN PAPER (S)	Host machine tray 3, deflection adjustment value (normal paper, small size)	Not more than LT size	1 to 99	50
D		TRAY3 PLAIN PAPER (L)	Host machine tray 3, deflection adjustment value (normal paper, large size)	Not less than LT size	1 to 99	50
E		TRAY3 HEAVY PAPER1 (S)	Host machine tray 3, deflection adjustment value (Cardboard 1, small size)	Not more than LT size	1 to 99	50
F		TRAY3 HEAVY PAPER1 (L)	Host machine tray 3, deflection adjustment value (Cardboard 1, large size)	Not less than LT size	1 to 99	50
G		TRAY4 PLAIN PAPER (S)	Host machine tray 4, deflection adjustment value (Normal paper, small size)	Not more than LT size	1 to 99	50
H		TRAY4 PLAIN PAPER (L)	Host machine tray 4, deflection adjustment value (Normal paper, large size)	Not less than LT size	1 to 99	50
I		TRAY4 HEAVY PAPER1 (S)	Host machine tray 4, deflection adjustment value (Cardboard 1, small size)	Not more than LT size	1 to 99	50
J		TRAY4 HEAVY PAPER1 (L)	Host machine tray 4, deflection adjustment value (Cardboard 1, large size)	Not less than LT size	1 to 99	50
K		MANUAL PLAIN PAPER (S)	Manual tray, deflection adjustment value (Normal paper, small size)	Not more than LT size	1 to 99	50
L		MANUAL PLAIN PAPER (L)	Manual tray, deflection adjustment value (Normal paper, large size)	Not less than LT size	1 to 99	50
M		MANUAL HEAVY PAPER1 (S)	Manual tray, deflection adjustment value (Cardboard1, small size)	Not more than LT size	1 to 99	50
N		MANUAL HEAVY PAPER1 (L)	Manual tray, deflection adjustment value (Cardboard1, large size)	Not less than LT size	1 to 99	50
O		MANUAL OHP1	Manual tray, deflection adjustment value (OHP1)		1 to 99	50
P		MANUAL ENV	Manual tray, deflection adjustment value (Envelope)		1 to 99	50
Q		ADU PLAIN PAPER (S)	ADU, deflection adjustment value (normal paper, small size)	Not more than LT size	1 to 99	50
R		ADU PLAIN PAPER (L)	ADU, deflection adjustment value (normal paper, large size)	Not less than LT size	1 to 99	50
S		ADU HEAVY PAPER1 (S)	ADU, deflection adjustment value (Cardboard1, small size)	Not more than LT size	1 to 99	50
T		ADU HEAVY PAPER1 (L)	ADU, deflection adjustment value (Cardboard1, large size)	Not less than LT size	1 to 99	50
U	ENGIN	A4LCC	A4LCC, deflection adjustment value		1 to 99	50
V		A3LCC (S)	A3LCC deflection adjustment value (Normal paper, small size)	Not more than LT size	1 to 99	50
W		A3LCC (L)	A3LCC deflection adjustment value (Normal paper, large size)	Not less than LT size	1 to 99	50
X		A3LCC HEAVY PAPER1 (S)	A3LCC deflection adjustment value (Cardboard, small size)	Not more than LT size	1 to 99	50
Y		A3LCC HEAVY PAPER1 (L)	A3LCC deflection adjustment value (Cardboard, large size)	Not more than LT size	1 to 99	50

2-B Print lead edge adjustment

- 1) Execute SIM.50-5 by the key operation of the machine. Then, the displays shown on the right side appear.
- 2) Press the [\downarrow] key on the touch panel to select "E:PAPER".
- 3) Then, enter the adjustment value 6 with the [10] key, and press the [OK] button.
(Adjustment value 6: LCC)
- 4) When the [EXECUTE] button is pressed, the [EXECUTE] button is highlighted, and printing for adjustment pattern image is started with the currently set value. After printing is finished, the [EXECUTE] button returns to the normal display status.
- 5) Check the adjustment pattern image position.
Measure the dimensions of the void area in the adjustment pattern right and left frame directions, and ensure that they satisfy the conditions shown below.

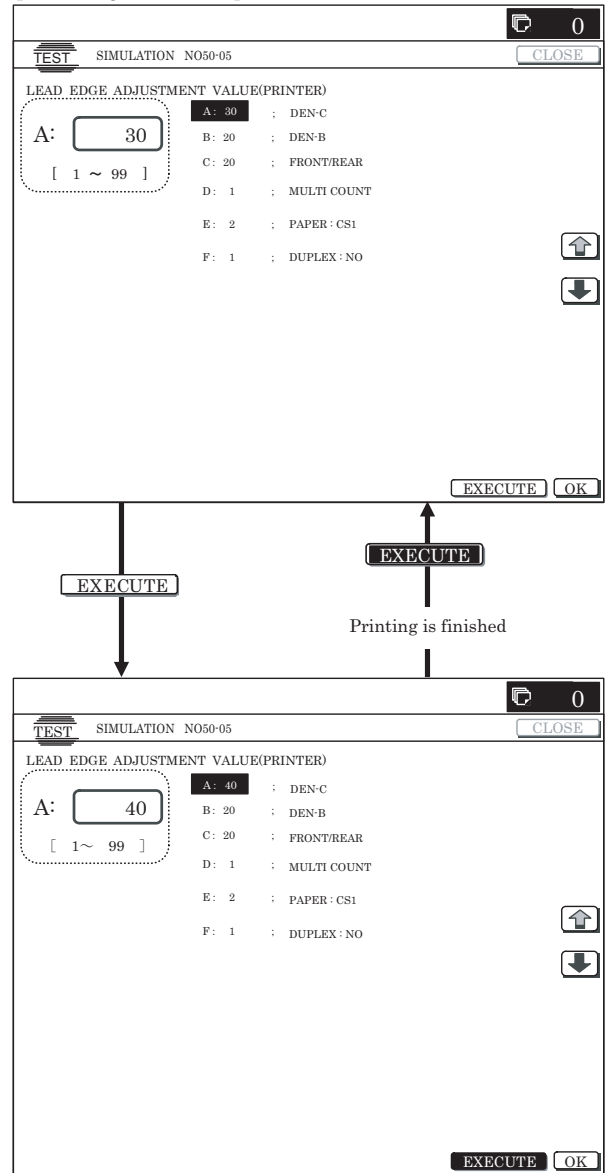


If condition of $A=4.0 \pm 2.0\text{mm}$, $B=4.0 \pm 2.0\text{mm}$ is satisfied, no adjustment is necessary.

If it does not satisfy the condition above, execute the procedures shown below.

- 6) Change the adjustment values of the adjustment items A(DEN-C) and B(DEN-B).
 - * As the adjustment value of the item A(DEN-C) is decreased by 1, the print start position is moved to the lead edge side of paper against the paper feed direction by 0.1mm.
 - * As the adjustment value of the item B(DEN-B) is decreased by 1, the print range is increased to the trailing edge side of paper against the paper feed direction by 0.1mm.
- 7) Repeat the steps from 4) to 6) until the condition shown in the step 5) is satisfied.
- 8) After the adjustment is finished, escape from the simulation mode with the reset key.

[Switching of screen]



<Description of items>

Item	Display items and details		Descriptions	Setup range	Default	Writing	Remarks
A	DEN-C		Print lead edge adjustment	1 to 99	30	Yes	Adjustment value for matching to the print lead edge for printer. As the adjustment value of this item is decreased by 1, the print start position against the paper feeding direction is moved to the leading edge side by 0.1mm.
B	DEN-B		Sub scanning direction print area adjustment	1 to 99	20	Yes	Amount of void to be created at the trailing edge of paper. As the adjustment value of the item B(DEN-B) is decreased by 1, the sub scanning print range adjustment value is decreased by 0.1mm.
C	FRONT/REAR		FRONT/REAR void amount adjustment	1 to 99	20	Yes	Amount of void to be created at the right and left edges of paper. As the value is increased, the void amount is increased.
D	MULTI COUNT		Number of printed sheets	1 to 999	1	No	
E	PAPER	MFT	Cassette selection	1 to 6	1	2 (CS1)	No
		CS1			2		
		CS2			3		
		CS3			4		
		CS4			5		
		LCC			6		
F	DUPLEX	YES	Double-sided print selection	0 to 1	0	1 (NO)	No
		NO			1		

* The item name for the items J and K is detailed display.

Example: PAPER: CS1

[9] SIMULATION

1. List

Code		Function (purpose)	Purpose	Section
Main	Sub			
4	2	Used to check the operations of the sensors and detectors in the large capacity tray (LCC) and the control circuit.	Operation test/Check	Large capacity tray (LCC)
	3	Used to check the operations of the loads in the large capacity tray (LCC) and the control circuit.	Operation test/Check	Large capacity tray (LCC)
	5	Used to check the operations of the clutch (LTRC) in the LCC and the monitor.	Operation test/Check	Large capacity tray (LCC)
15	-	Used to cancel the self-diag "U6-09 (large capacity paper feed tray)" trouble.	Clear/cancel (Trouble etc.)	LCC

2. Details of trouble code

4

4-2	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the sensors and detectors in the large capacity tray (LCC) and the control circuit.
Section	Large capacity tray (LCC)

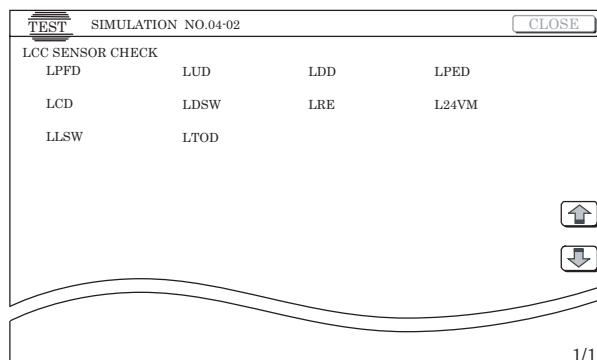
Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

Sensors and detectors which are turned on are highlighted.

<MX-LCX2>

LPFD	LCC transport sensor
LUD	LCC tray upper limit detection
LDD	LCC tray lower limit detection
LPED	LCC tray paper empty detection
LCD	LCC tray insertion detection
LDSW	LCC upper open/close detection SW
LRE	LCC lift motor encoder detection
L24VM	LCC 24V power monitor
LLSW	LCC upper limit SW
LTOD	LCC main unit connection detection



4-3

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the loads in the large capacity tray (LCC) and the control circuit.
Section	Large capacity tray (LCC)

Operation/Procedure

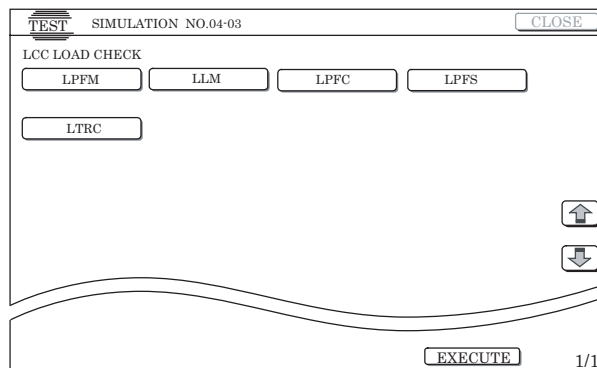
- 1) Select a target of the operation check with the touch panel.
- 2) Press [EXECUTE] key.

The selected load is operated.

When [EXECUTE] is pressed, the operation is stopped.

<MX-LCX2>

LPFM	LCC transport motor
LLM	LCC lift motor
LPFC	LCC paper feed clutch
LPFS	LCC paper feed solenoid
LTRC	LCC transport clutch



4-5

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the clutch (LTRC) in the LCC and the monitor.
Section	Large capacity tray (LCC)

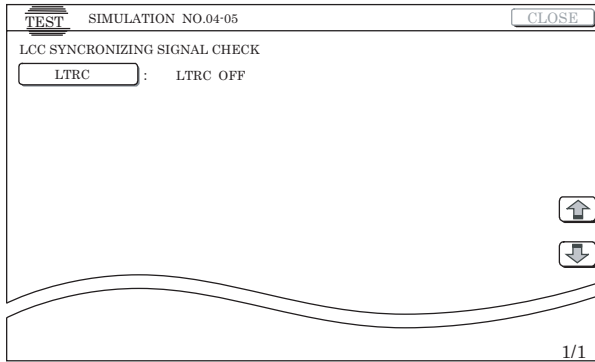
Operation/Procedure

1) Press LTRC key to check the sync signal.

When normal: ON When abnormal: OFF

2) Press the highlighted LTRC key to check the sync signal.

When normal: OFF When abnormal: ON



15

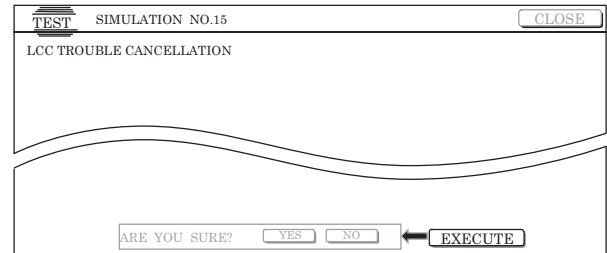
15--

Purpose	Clear/cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag "U6-09 F3-12, F3-22(largecapacity paper feed tray, paper feed tray 1, 2)" trouble.
Section	LCC

Operation/Procedure

1) Press [EXECUTE] key.

2) Press [YES] key to execute cancellation of the trouble.



[10] SELF DIAG MESSAGE AND TROUBLE CODE

1. Self diag

A. General

When a trouble occurs in the machine or when the life of a consumable part is nearly expired or when the life is expired, the machine detects and displays it on the display section or notifies to the user or the serviceman by voice messages. This allows the user and the serviceman to take the suitable action. In case of a trouble, this feature notifies the occurrence of a trouble and stops the machine to minimize the damage.

B. Function and purpose

- 1) Securing safety. (The machine is stopped on detection of a trouble.)
- 2) The damage to the machine is minimized. (The machine is stopped on detection of a trouble.)
- 3) By displaying the trouble content, the trouble position can be quickly identified. (This allows to perform an accurate repair, improving the repair efficiency.)
- 4) Preliminary warning of running out of consumable parts allows to arrange for new parts in advance of running out. (This avoids stopping of the machine due to running out the a consumable part.)

C. Self diag message kinds

- The self diag messages are classified as shown in the table below.

Class 1	User	Warning of troubles which can be recovered by the user. (Paper jam, consumable part life expiration, etc.)
	Service man	Warning of troubles which can be recovered only by a serviceman. (Motor trouble, maintenance, etc.)
	Other	-
Class 2	Warning	Warning to the user, not a machine trouble (Preliminary warning of life expiration of a consumable part, etc.)
	Trouble	Warning of a machine trouble. The machine is stopped.
	Other	-

D. Self diag operation

(1) Self diag operation and related work flow

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

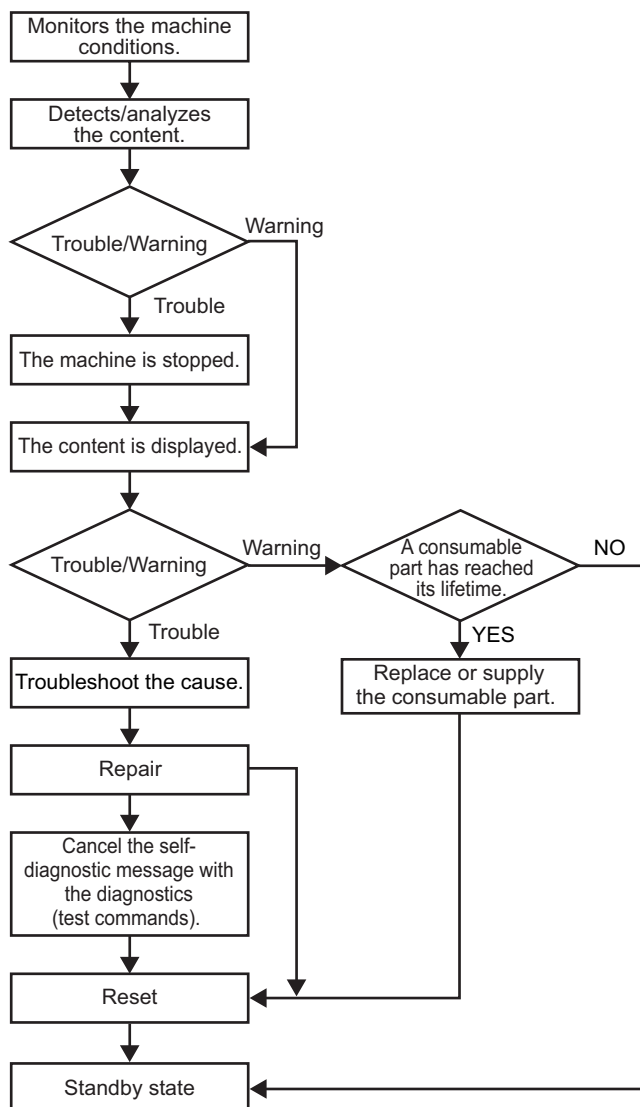
A warning message is displayed when a consumable part life is nearly expired or is expired.

When a warning message is displayed, the machine may be or may not be stopped.

The trouble messages and the warning messages are displayed by the LCD.

Some trouble messages are automatically cleared when the trouble is repaired. Some other troubles must be cleared by a simulation.

Some warning messages of consumable parts are automatically cleared when the trouble is repaired. Some other warning messages must be cleared by a simulation.



2. Trouble code list

No.	MAIN CODE	SUB CODE	Title (Content)	Section	Operation mode	Countermeasure (Remedy)	Note
1	U6	09	Lift motor trouble	LCC	Tray lift-up	Check connection.	
2		20	Communication trouble	LCC	LCC communication	Turn OFF/ON the power.	
3		21	Transport motor trouble	LCC	Paper feed	Check connection.	
4		22	24V trouble	LCC	Power ON	Check connection.	
5		51	LCC incompatibility trouble	LCC	Power ON	Check connection.	

3. Trouble code details

U6-09 LCC lift motor trouble

Trouble content		<ul style="list-style-type: none"> The encoder input value is not changed in 0.2sec (1st time)/0.5sec (2nd time and later) after rotation of the motor. The motor is rotated for 24sec or more.
Section		PCU
Case 1	Cause	Sensor trouble, LCC control PWB trouble, gear breakage, lift motor trouble
	Check and Remedy	Use SIM4-2 and 4-3 to check the operation of the sensor and the lift motor. Use SIM15 to cancel the trouble.

U6-20 LCC communication trouble

Trouble content		LCC communication error. Communication line test error after turning ON the power or canceling the exclusive simulation. LCC and machine model codes discrepancy error
Section		PCU
Case 1	Cause	Connector and harness connection trouble or disconnection, LCC control PWB trouble, control (PCU) PWB trouble, malfunction due to electrical noises
	Check and Remedy	Turn OFF/ON the power to cancel the trouble. Check the connector and the harness of the communication line.

U6-21 LCC transport motor trouble

Trouble content		After passing 1 sec from turning ON the motor, the lock state of the motor lock signal is detected continuously for 1 sec.
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, an overcurrent to the motor, LCC control PWB trouble
	Check and Remedy	Use SIM4-3 to check the operation of the transport motor.

U6-22 LCC 24V power abnormality

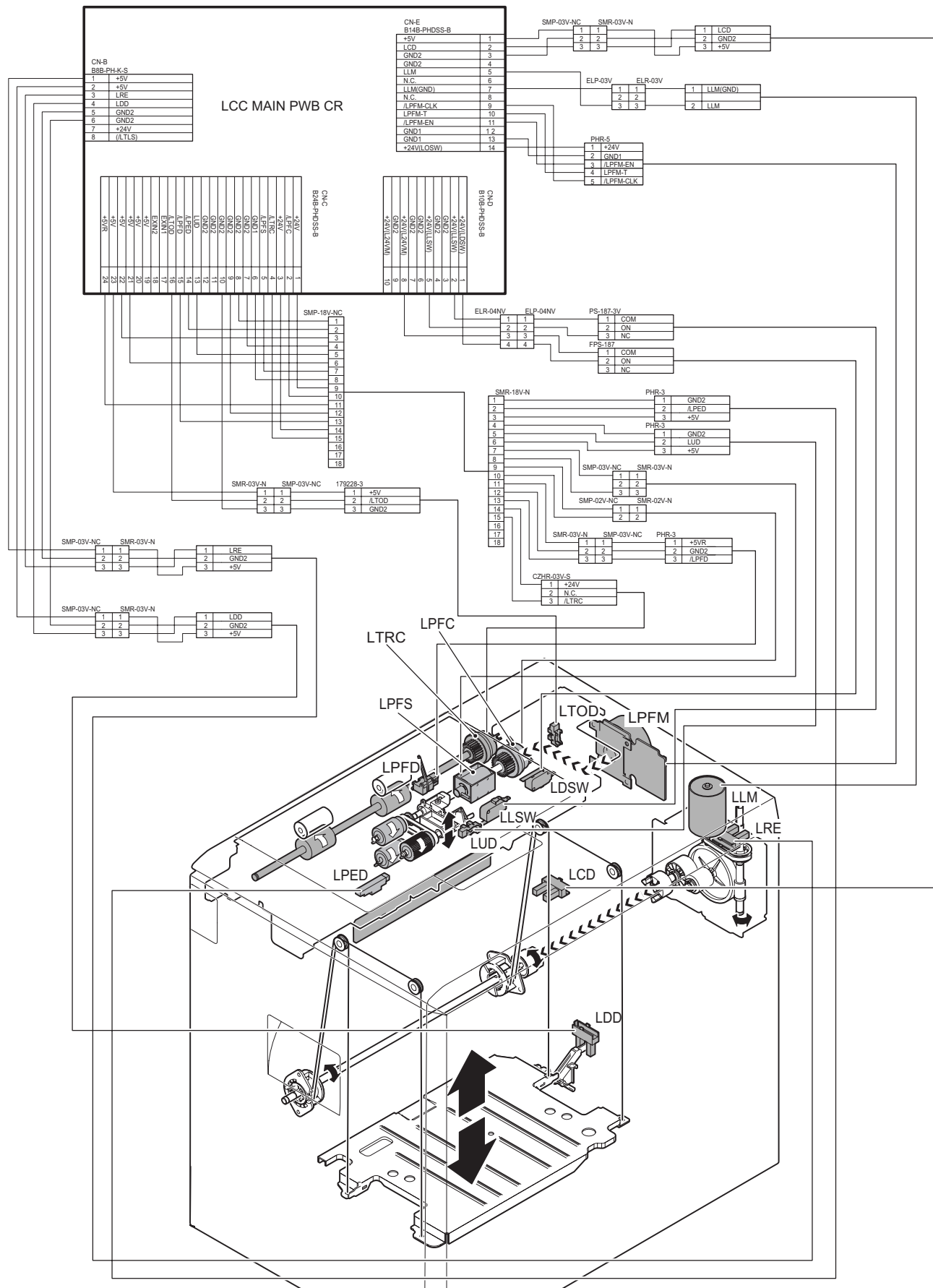
Trouble content		DC24V power is not supplied to LCC.
Section		PCU
Case 1	Cause	Connector and harness connection trouble or disconnection, LCC control PWB trouble, power unit trouble
	Check and Remedy	Check the connector and the harness of the power line. Check that the power unit and the LCC control PWB is of 24V.

U6-51 LCC incompatibility trouble

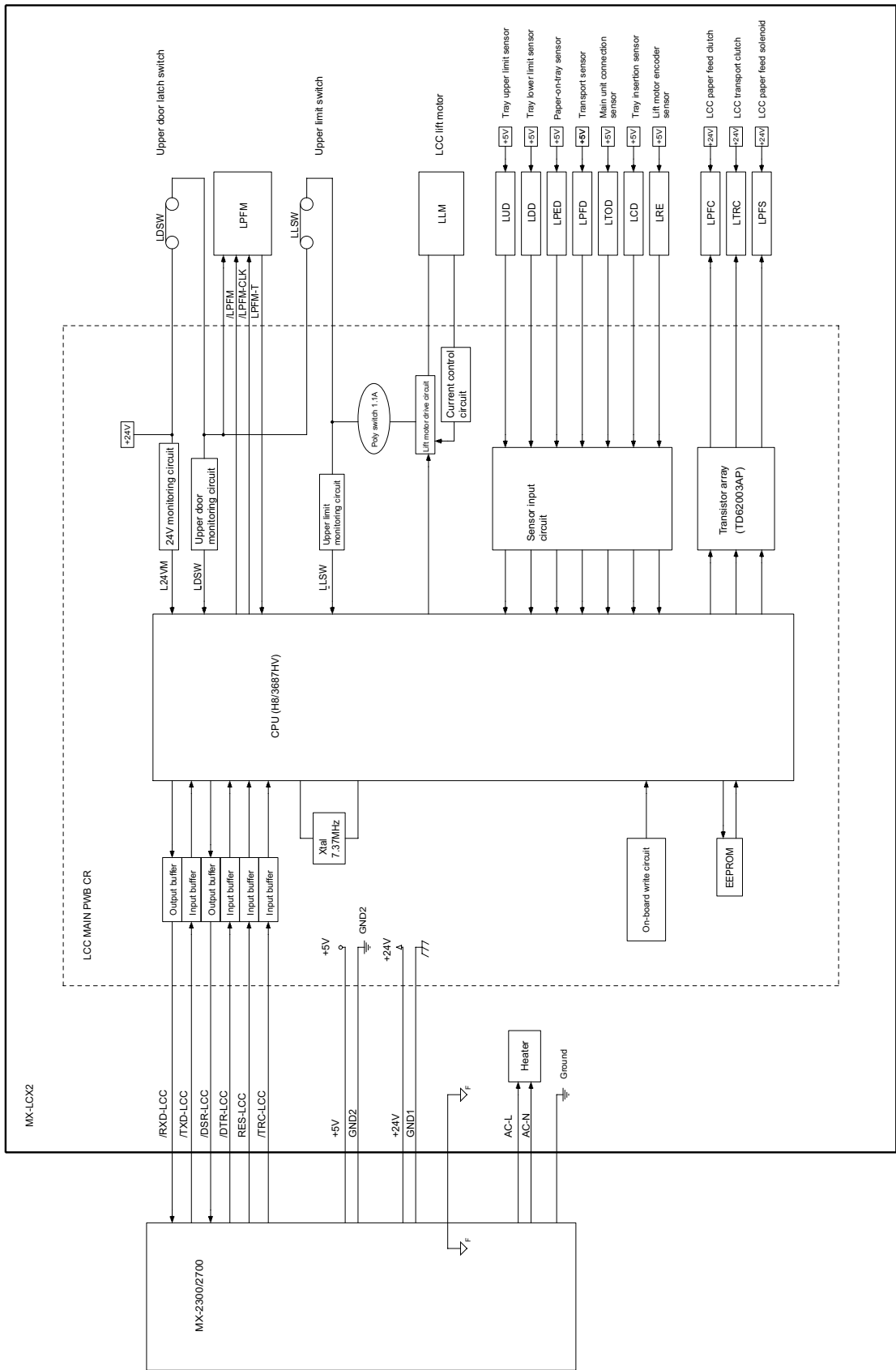
Trouble content		Detection of LCC connection which is incompatible with the MX-5500N/6200N/7000N series.
Section		PCU
Case 1	Cause	Connection of the LCC, which is incompatible with the MX-5500N/6200N/7000N series is detected.
	Check and Remedy	Connect the MX-LCX2.

[11] ELECTRICAL SECTION

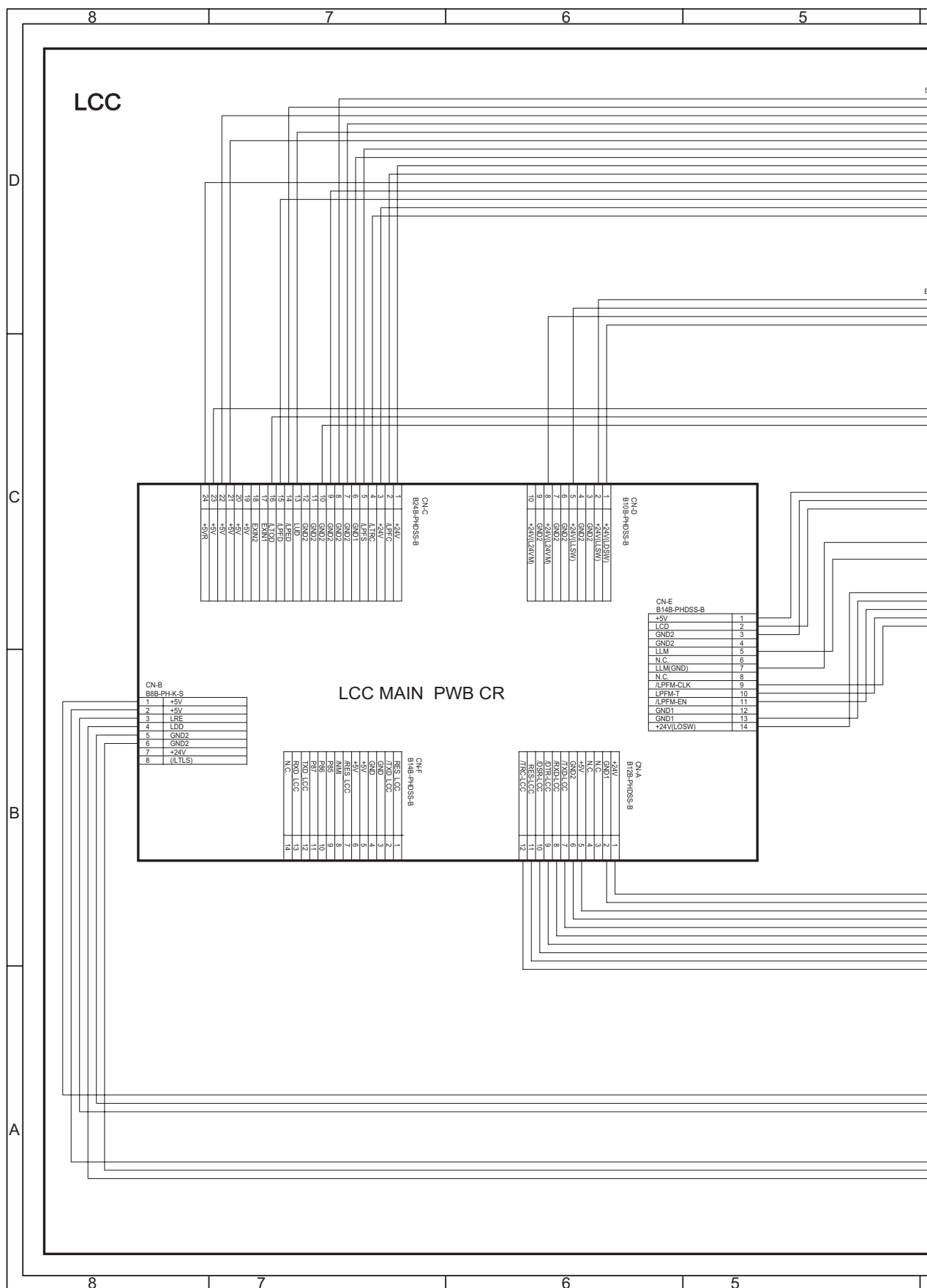
1. Electronic/mechanical parts relationship diagram

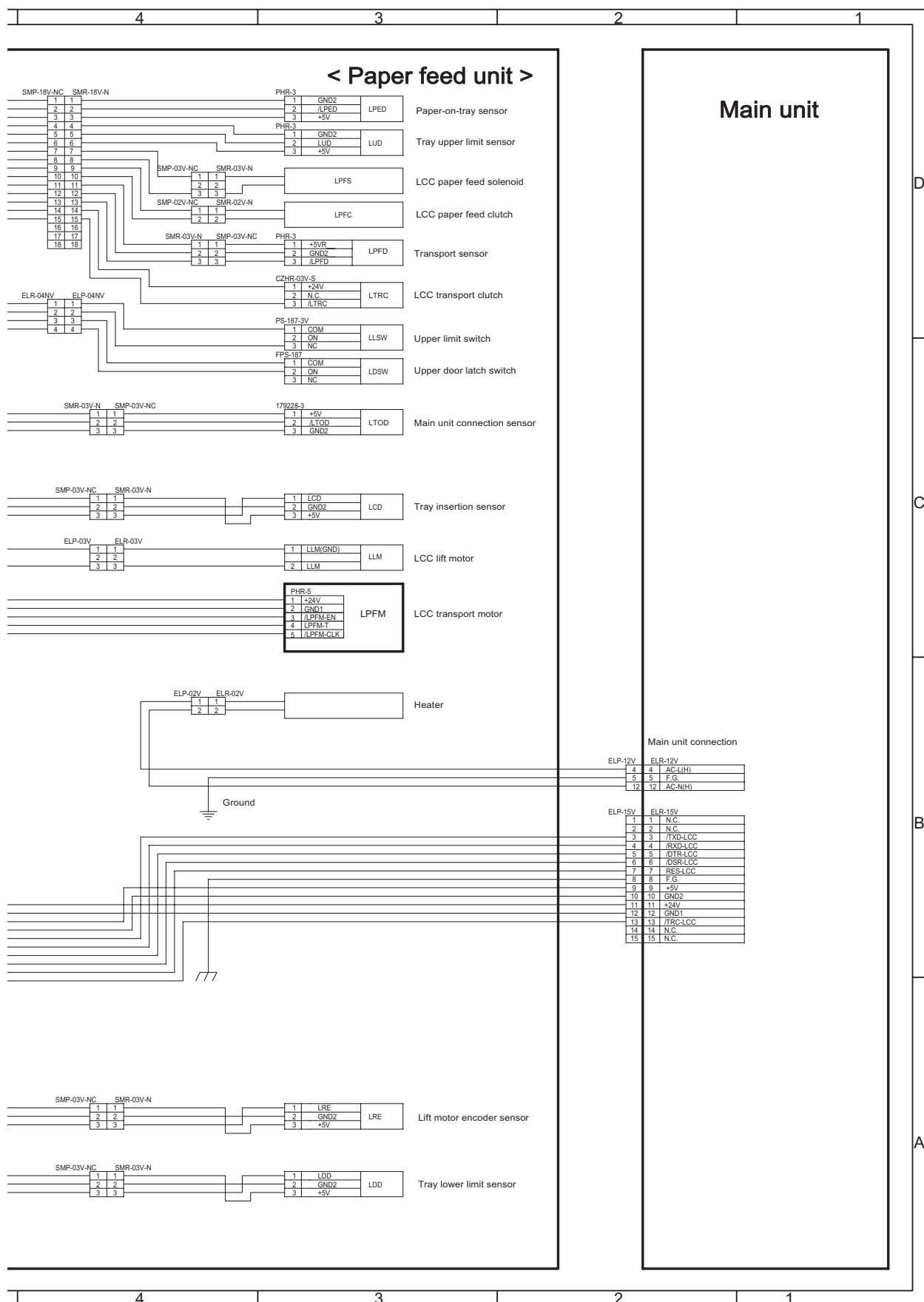


2. Block diagram



3. Wiring diagram





LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder. The alphabet following the LF mark shows the kind of lead-free solder.

Example:

Lead-Free

Solder composition code (Refer to the table at the right.)

5mm

LF

a

<Solder composition code of lead-free solder>

Solder composition	Solder composition code
Sn-Ag-Cu	a
Sn-Ag-Bi Sn-Ag-Bi-Cu	b
Sn-Zn-Bi	z
Sn-In-Ag-Bi	i
Sn-Cu-Ni	n
Sn-Ag-Sb	s
Bi-Sn-Ag-P Bi-Sn-Ag	p

(1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD

When repairing a lead-free solder PWB, use lead-free solder thread.
Never use conventional lead solder thread, which may cause a breakdown or an accident.
Since the melting point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommendable.

(2) NOTE FOR SOLDERING WORK

Since the melting point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.
Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.
If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.
If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.

CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.

Udskiftning må kun ske med batteri

af samme fabrikat og type.

Levér det brugte batteri tilbage til leverandoren.

(English) Caution !

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type

recommended by the manufacturer.

Dispose of used batteries according to manufacturer's instructions.

(Finnish) VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.

Vaihda paristo ainoastaan laitevalmistajan suosittelemaan

tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden

mukaisesti.

(French) ATTENTION

Il y a danger d'explosion s' il y a remplacement incorrect

de la batterie. Remplacer uniquement avec une batterie du

même type ou d'un type équivalent recommandé par

le constructeur.

Mettre au rebut les batteries usagées conformément aux

instructions du fabricant.

(Swedish) VARNING

Explosionsfara vid felaktigt batteribyte.

Använd samma batterityp eller en ekvivalent

typ som rekommenderas av apparattillverkaren.

Kassera använt batteri enligt fabrikantens

instruktion.

(German) Achtung

Explosionsgefahr bei Verwendung inkorrektter Batterien.

Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder

vom Hersteller empfohlene Batterien verwendet werden.

Entsorgung der gebrauchten Batterien nur nach den vom

Hersteller angegebenen Anweisungen.

* Applicable to battery-operated equipment

CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)

“BATTERY DISPOSAL”

THIS PRODUCT CONTAINS A LITHIUM PRIMARY
(MANGANESE DIOXIDE) MEMORY BACK-UP BATTERY
THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE
BATTERY FROM THE PRODUCT AND CONTACT YOUR
LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION
ON RECYCLING AND DISPOSAL OPTIONS.

“TRAITEMENT DES PILES USAGÉES”

CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE
MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANESE)
QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA
PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE
AGENCE ENVIRONNEMENTALE LOCALE POUR DES
INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET
DE TRAITEMENT.

* Applicable to battery-operated equipment



COPYRIGHT © 2006 BY SHARP CORPORATION

All rights reserved.

Printed in Japan.

No part of this publication may be reproduced,
stored in a retrieval system, or transmitted,
in any form or by any means,
electronic; mechanical; photocopying; recording or otherwise
without prior written permission of the publisher.

Trademark acknowledgements

- Microsoft® Windows® operating system is a trademark or copyright of Microsoft Corporation in the U.S.A. and other countries.
- Windows® 95, Windows® 98, Windows® Me, Windows NT® 4.0, Windows® 2000, Windows® XP, Windows® 2000 Server, Windows® Server 2003 and Internet Explorer® are trademarks or copyrights of Microsoft Corporation in the U.S.A. and other countries.
- IBM and PC/AT are trademarks of International Business Machines Corporation.
- Acrobat® Reader Copyright® 1987- 2002 Adobe Systems Incorporated. All rights reserved. Adobe, the Adobe logo, Acrobat, and the Acrobat logo are trademarks of Adobe Systems Incorporated.
- All other trademarks and copyrights are the property of their respective owners.

SHARP CORPORATION
Digital Document System Group
CS Promotion Center
Yamatokoriyama, Nara 639-1186, Japan
2006 June Printed in Japan